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| EXAMINER | |
|---|---|
| LE, DANG D | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2834 | |

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/501,109 | BURGBACHER, MARTIN | |
| | Examiner | Art Unit | |
| | Dang D. Le | 2834 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 4, and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lutkenhaus et al. (6,177,741) in view of Best et al. (5,828,147).

Regarding claim 1, Lutkenhaus et al. shows a stator assembly (3) having a plurality of stator poles (located in bobbin 10), said plurality being divisible by six (column 3, line 5),

- A first, a second, a third, a fourth, a fifth and a sixth of said stator poles being arranged successively within a predetermined angular range (Figure 2);
- Three winding phases (shown coil 7 in Figure 2 and its across coil forming first phase) connected in a delta (column 2, line 34) configuration;
- Three respective current rails (13) associated with respective ones of said winding phases for their connection; wherein

- A first winding coil (W1) is arranged on said first stator pole (in bobbin 10) between a first one (RAIL A) of said current rails and a second one (RAIL B) of said current rails;
- A second winding coil (W2) is arranged on said second stator pole between said second current rail (RAIL B) of said current rails and a third one (RAIL C) of said current rails (relative position of W2 is between RAIL B at left side and RAIL C at right side);
- A third winding coil (W3) is arranged on said third stator pole between said third current rail (RAIL C) and said first current rail (RAIL A);
- A fourth winding coil (W4) is arranged on said fourth stator pole between said first current rail (RAIL A) and said second current rail (RAIL B);
- A fifth winding coil (W5) is arranged on said fifth stator pole between said second current rail (RAIL B) and said third current rail (RAIL C) and
- A sixth winding coil (W6) is arranged on said sixth stator pole between said third current rail (RAIL C) and said first current rail (RAIL A).

Lutkenhaus et al. does not show the first to the sixth winding coils electrically connected between the associated current rails. Lutkenhaus et al. only shows the star connection although indicates that "a delta connection is also possible" in column 2, line 34.

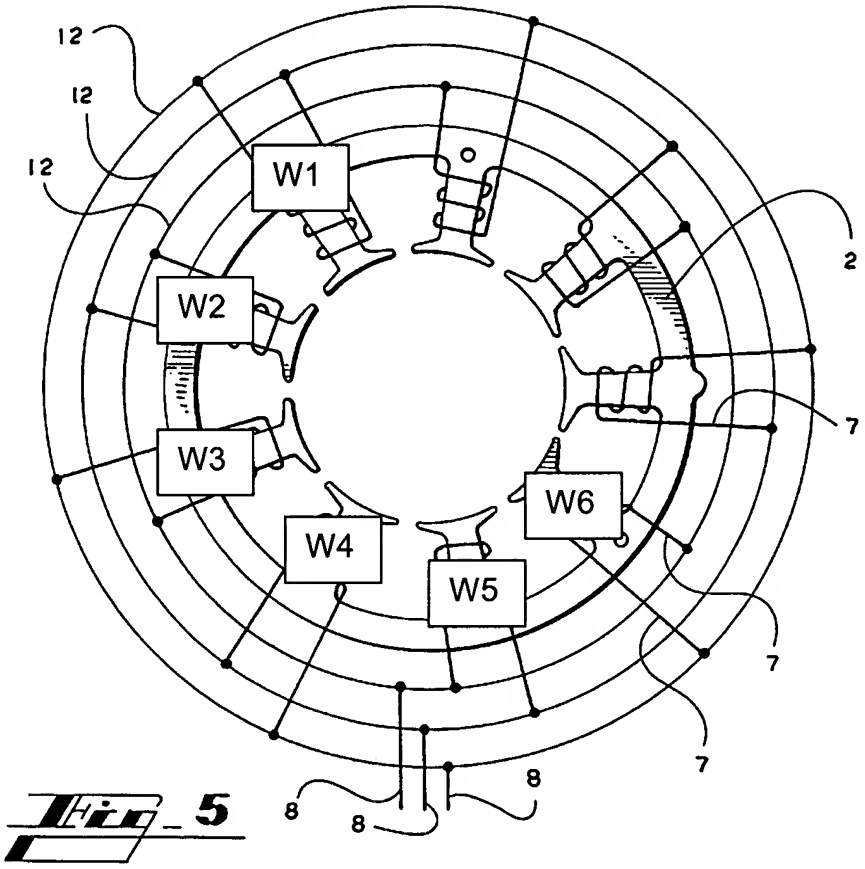


Fig. 5

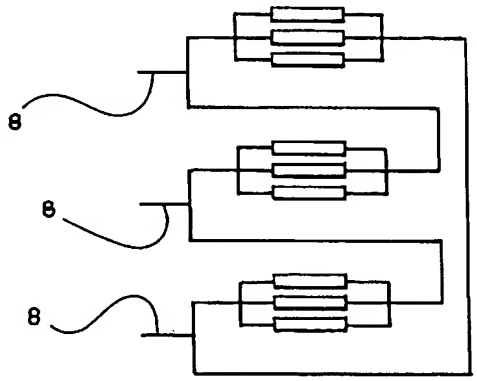


Fig. 6

For the purpose of providing a fully automatic interconnecting, Best et al. shows a delta connection (Figures 4 and 5):

- A first winding coil (W1) is arranged on said first stator pole (of stator 2) and electrically connected between a first one (outer 12, also see 12 in Figures 2 and 7) of said current rails and a second one (middle 12) of said current rails;
- A second winding coil (W2) is arranged on said second stator pole and electrically connected between said second current rail (middle 12) of said current rails and a third one (inner 12) of said current rails;
- A third winding coil (W3) is arranged on said third stator pole and electrically connected between said third current rail (inner 12) and said first current rail (outer 12);
- A fourth winding coil (W4) is arranged on said fourth stator pole and electrically connected between said first current rail (outer 12) and said second current rail (middle 12);
- A fifth winding coil (W5) is arranged on said fifth stator pole and electrically connected between said second current rail (middle 12) and said third current rail (inner 12) and
- A sixth winding coil (W6) is arranged on said sixth stator pole and electrically connected between said third current rail (inner 12) and said first current rail (outer 12).

Since Lutkenhaus et al. and Best et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to connect the coil in delta with associated current rails as taught by Best et al. for the purpose discussed above.

Regarding claim 4, it is noted that Lutkenhaus et al. also shows at least one of said current rails (13) being configured to electrically interconnect a plurality of interface points (end of 13), said interface points being separated by three intervening stator poles (W1, W2, and W3).

Regarding claim 6, Best et al. also shows said current rails being embedded within an insulating body (9) and are, except for terminals (13a) of said rails, substantially completely enclosed by said body for the purpose of automating the interconnecting the wire ends.

Regarding claim 7, it is noted that Best et al. also shows the terminals (13) projecting out of the insulating body (9).

Regarding claim 8, it is noted that Lutkenhaus et al. also shows a terminal being electrically connected with a circuit board (26, through socket 22 and terminal 27) which is arranged adjacent an outer face of the stator assembly (Figure 1).

4. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lutkenhaus et al. in view of Best et al. as applied to claim 1, and further in view of Lill et al. (4,287,446).

Regarding claims 2 and 3, the machine of Lutkenhaus et al. modified by Best et al. includes all of the limitations of the claimed invention except for at least two successive winding coils (or all six windings) being continuously wound and at their interface are electrically connected to an associated current rail without interrupting their winding wire.

Lill et al. shows successive winding coils being continuously wound and at the interface are electrically connected to an associated current rail (20) without interrupting their winding wire for the purpose of reducing the amount of labor to produce the stator.

Since Lutkenhaus et al., Best et al., and Lill et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to wind the coil continuously without interrupting the winding wire as taught by Lill et al. for the purpose discussed above.

5. Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lutkenhaus et al. in view of Best et al. and further in view of von der Heide et al. (5,382,853).

Regarding claim 5, the machine of Lutkenhaus et al. modified by Best et al. includes all of the limitations of the claimed invention except for a permanent magnet rotor, wherein said stator assembly has three stator poles for each pole pair of said rotor.

von der Heide et al. shows a permanent magnet rotor (17), wherein said stator assembly (10) has three stator poles for each pole pair of said rotor for the purpose of reducing the axial size and maximizing the space factor.

Since Lutkenhaus et al., Best et al., and von der Heide et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use permanent magnet rotor and to set three stator pole per rotor pole pair as taught by von der Heide et al. for the purpose discussed above.

Regarding claim 10, claim 10 is a combination of claims 1 and 5. As a result, claim 10 is also rejected.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lutkenhaus et al. in view of Best et al. and further in view of Bosch (DE 41 22 529).

Regarding claim 9, the machine of Lutkenhaus et al. modified by Best et al. includes all of the limitations of the claimed invention except for the power semiconductor provided on the circuit board.

Bosch shows the power semiconductor provided on the circuit board for the purpose of controlling the operation of the motor.

Since Lutkenhaus et al., Best et al., and Bosch are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include a power semiconductor as taught by Bosch for the purpose discussed above.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Information on How to Contact USPTO***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D. Le whose telephone number is (571) 272-2027. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

8/24/06

DANG LE
PRIMARY EXAMINER